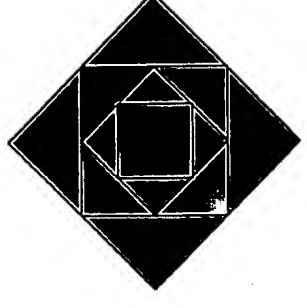


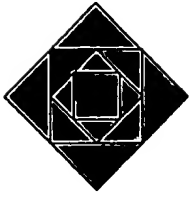
Unified Customer Reporting (UCR) Pilot

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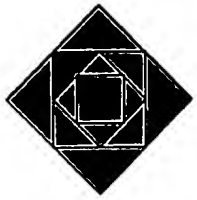
IBM Research Lab in Haifa



The Problem

- **Applications need to use data that is warehoused in diverse data sources and repositories.**
 - data is expressed in different formats and languages
 - data is retrieved in different access methods
 - through different delivery vehicles.

- **Examples:**
 - Analyzing System Performance - server performance, probes performance, network performance
 - Personnel data warehouses - employees addresses, employees salary, employees education
 - Customer Relationship Management - customer profiles, billing, trouble tickets



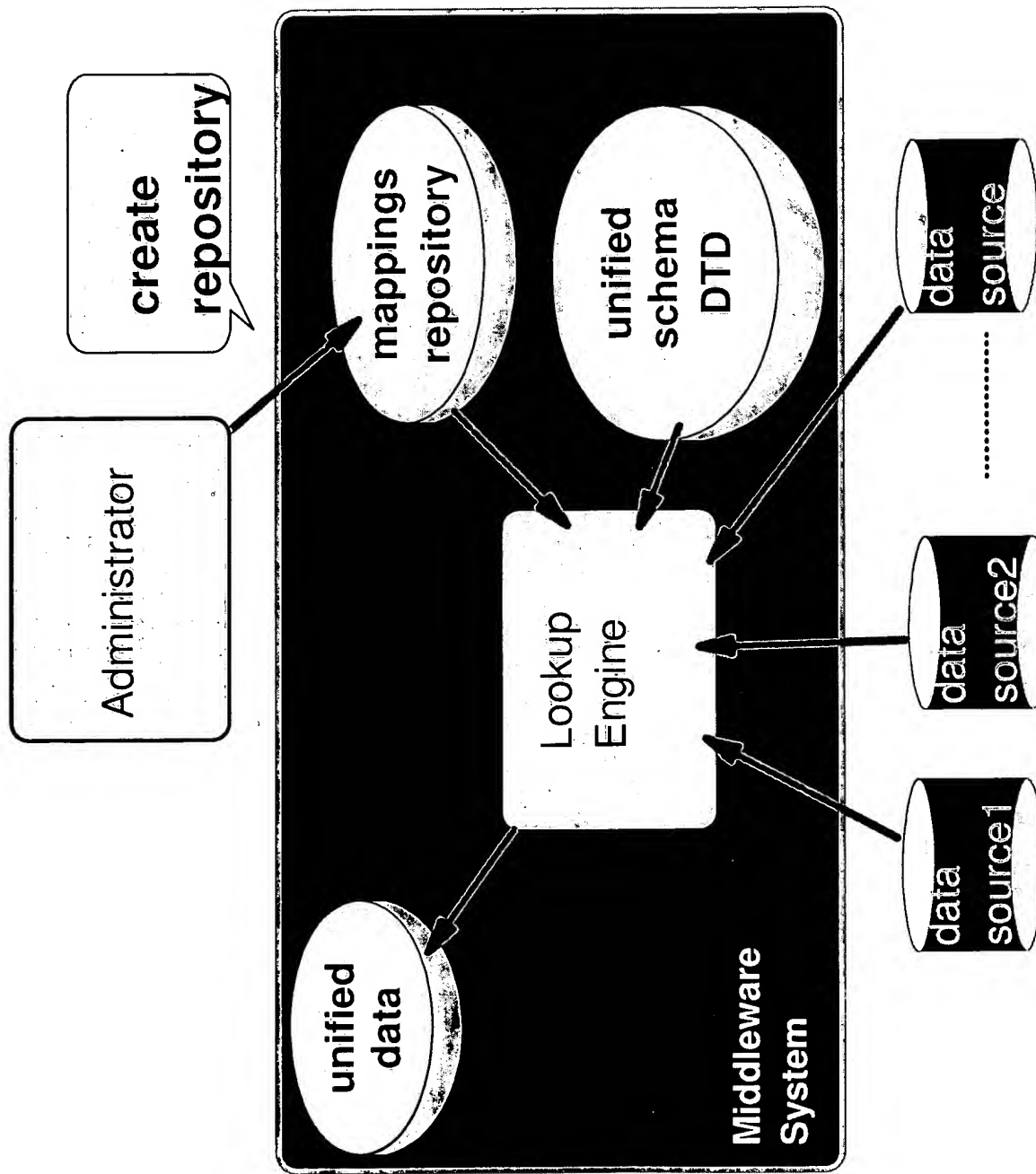
Traditional Solutions

- **Integrate the data at the application level**
 - couples business logic with the data
 - difficult to add new data sources or change existing ones
 - each application developer need to learn each data source, how to access them and how to correlate them.

- **Create a data warehouse**
 - not flexible to dynamic changes in the data sources
 - difficult to correlate the data sources and put them in a tabular format
 - DataJoiner is an IBM product that employs this solution



Our Solution



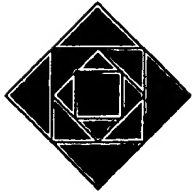


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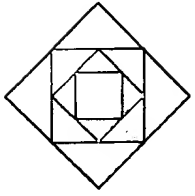
The Pilot

- **Integrates and correlates SRM and EPP data sources**
 - Server Resource Management (SRM) measures resources of servers such as CPU utilization
 - End-to-end Probe Performance (EPP) measures the response time of probes such as access to web pages
- **Visualizes the data using the LifeLines concept**
 - Research done by Plaisant & Shneiderman from University of Maryland and by Watson
 - presents the data in layers and allows to discover patterns
 - see information at a glance while preserving the ability to drill down to see detailed backup information
- **Demo URL:**
http://9.148.18.137/UCR/UCRDemo/UCRDemo_index.html



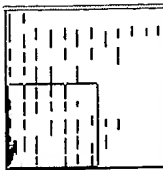
The Performance Puzzle

- **The integration and correlation will allow to answer questions as:**
 - What was the performance of the servers when the application (probe) failed?
 - How changes to applications affect the servers?
 - How applications perform at a specific load on a server?
 - Which component in the server had a bottleneck when the server runs a specific application?
 - Which component in the application had a bottleneck when it runs on some specific servers?



LifeLines

- Each entity i.e. probe or server has its own shape (screen representation)
- Correlation is done by overlaying the servers shape over the probes shape
- Use of categorical colormaps
- Color entities by different dimensions
- Fast way to see what happened and the temporal relationships among things
- Positioning on the Y axis is accomplished principally through categorization and sorting
- A thumbnail overview and scrolling
- Allows to drill-down to detailed information



IBM Invention Disclosure**Title of patent application:**

Method and System For Integrating Diverse Data Sources Using XML

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